

Notice of Allowability

Application No.

10/650,910

Examiner

Mary Hoffman

Applicant(s)

JACKSON, ROGER P.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 08/30/2007.
2. ☒ The allowed claim(s) is/are 31-39.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 20070916.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


EDUARDO C. ROBERT
SUPERVISORY PATENT EXAMINER

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/30/2007 has been entered.

EXAMINER'S AMENDMENT

Authorization for this examiner's amendment was given in a telephone interview with Mr. McMahon on 9/17/2007.

The application has been amended as follows:

In claim 31, line 3 of paragraph (e), the claim reads "with shank" and should be changed to recite --with said shank--.

In claim 33, line 3 of paragraph (e), the claim reads "with shank" and should be changed to recite --with said shank--.

In claim 34, line 3 of paragraph (e), the claim reads "with shank" and should be changed to recite --with said shank--.

In claim 35, line 29 the claim reads "said said" and should be changed to recite only --said--. Also in claim 35, in line 4 of paragraph (b), the claim reads "therethrough; head" and should be changed to recite --therethrough; said head--.

In claim 36, line 27 the claim reads "said said" and should be changed to recite only --said--. Also in claim 36, in line 4 of paragraph (b), the claim reads "therethrough; head" and should be changed to recite --therethrough; said head--.

In claim 37, line 4, delete the word "open". Also in claim 37, in line 9 of paragraph (c), the claim reads "rotates with said head" and should be changed to recite --rotates with said shank--. Also in claim 37, in line 5 of paragraph (e), the claim reads "ring and head as" and should be changed to recite --ring and said head so as--.

In claim 38, line 4, delete the word "open". Also in claim 38, in line 9 of paragraph (c), the claim reads "rotates with said head" and should be changed to recite --rotates with said shank--. Also in claim 38, in line 5 of paragraph (e), the claim reads "ring and head as" and should be changed to recite --ring and said head so as--.

In claim 39, line 4, delete the word "open". Also in claim 39, in line 9 of paragraph (c), the claim reads "rotates with said head" and should be changed to recite --rotates with said shank--. Also in claim 39, in line 5 of paragraph (e), the claim reads "ring and head as" and should be changed to recite --ring and said head so as--.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

The claims in the instant application have not been rejected using prior art because no references, or reasonable combination thereof, could be found which disclose, or suggest the device of independent claims 31, 33, 34, 35, 36, 37, 38 and 39,

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and dependents thereof, including a polyaxial head bone screw assembly for surgical implantation and comprising: (a) a shank having a threaded body adapted to be implanted in a bone and a capture end; (b) a head having a channel adapted to receive a rod within said channel, said head having a bore formed therethrough sized and shaped to allow uploading of said shank therethrough and so as to receive said shank when assembled; c) said capture end of said shank being operably received within said bore of said head; d) said capture end of said shank has a frusto-conical surface diminishing in diameter toward said shank; e) a retainer ring non integral with said shank and secured on said capture end of said shank so as to rotate with shank relative to said head while in an adjustment configuration and being located within said head to provide a shank and retainer ring structure to retain said capture end within said head and enabling selective angular positioning of said shank with respect to said head, while in said adjustment configuration; said shank and retainer ring structure extending into said channel such that upon assembly the shank and retainer ring structure is sized and shaped to be adapted to directly engage the rod; and f) a closure member operably received in said head in such a manner as to be adapted to engage a rod located within said channel and to urge the rod into engagement with said capture end of said shank in such a manner so as to fixedly position said head relative to such a rod and to secure said head from angular movement relative to said shank, when in a locking configuration (claim 31), OR a polyaxial head bone screw assembly for surgical implantation and comprising: (a) a shank having a threaded body adapted to be implanted in a bone and a capture end; (b) a head having a channel adapted to receive

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a rod within said channel, said head having a bore formed therethrough sized and shaped to allow uploading of said shank therethrough and so as to receive said shank when assembled; c) said capture end of said shank being operably received within said bore of said head; d) said capture end of said shank has a non-slip formation to enable non-slip engagement with a rod within said channel of said head; e) a retainer ring non integral with said shank and secured on said capture end of said shank so as to rotate with shank relative to said head while in an adjustment configuration and being located within said head to provide a shank and retainer ring structure to retain said capture end within said head and enabling selective angular positioning of said shank with respect to said head, while in said adjustment configuration; said shank and retainer ring structure extending into said channel such that upon assembly the shank and retainer ring structure is sized and shaped to be adapted to directly engage the rod; and (f) a closure member operably received in said head in such a manner as to be adapted to engage a rod located within said channel and to urge the rod into engagement with said capture end of said shank in such a manner so as to fixedly position said head relative to such a rod and to secure said head from angular movement relative to said shank, when in a locking configuration (claim 33), OR a polyaxial head bone screw assembly for surgical implantation and comprising: (a) a shank having a threaded body adapted to be implanted in a bone and a capture end; (b) a head having a channel adapted to receive a rod within said channel, said head having a bore formed therethrough sized and shaped to allow uploading of said shank therethrough and so as to receive said shank when assembled; (c) said capture end of said shank being operably received within said

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bore of said head; (d) said capture end of said shank has a knurled dome to enable non-slip engagement with a rod within said channel of said head; (e) a retainer ring non integral with said shank and secured on said capture end of said shank so as to rotate with shank relative to said head while in an adjustment configuration and being located within said head to provide a shank and retainer ring structure to retain said capture end within said head and enabling selective angular positioning of said shank with respect to said head, while in said adjustment configuration; said shank and retainer ring structure extending into said channel such that upon assembly the shank and retainer ring structure is sized and shaped to be adapted to directly engage the rod; and (f) a closure member operably received in said head in such a manner as to be adapted to engage a rod located within said channel and to urge the rod into engagement with said capture end of said shank in such a manner so as to fixedly position said head relative to such a rod and to secure said head from angular movement relative to said shank, when in a locking configuration (claim 34), OR polyaxial head bone screw assembly for surgical implantation and comprising: (a) a shank having a threaded body and a capture end; (b) a head having a channel outwardly open and adapted to receive a rod within said channel; said head having shank mating side with a shank receiving bore formed therethrough; head having a cavity therein open into said bore; (c) said capture end of said shank being received within said shank receiving bore of said head; (d) said capture end of said shank has a frusto-conical surface diminishing in diameter toward said shank; (e) a retainer ring with a split therein to enable resilient expansion and contraction of a diameter of said retainer ring; said retainer ring being received in said

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head cavity and resiliently receiving said capture end of said shank while within said cavity so as to retain said capture end within said head and forming a shank and retainer ring structure wherein the retainer ring rotates with said shank enabling selective angular positioning of said shank with respect to said head when in an assembly configuration; (f) said retainer ring has a frusto-conical retainer bore formed therethrough to enable mating engagement with said capture end within said ring bore; and (g) a closure member operably mountable within said head in such a manner as to close said channel and adapted to engage a rod within said channel so as to urge such a rod into direct engagement with said shank and retainer ring structure in such a manner as to secure said head from movement relative to such a rod and to secure said head from angular movement relative to said shank and retainer ring structure in a locking configuration (claim 35), OR a polyaxial head bone screw assembly for surgical implantation and comprising: (a) a shank having a threaded body and a capture end; (b) a head having a channel outwardly open and adapted to receive a rod within said channel; said head having shank mating side with a shank receiving bore formed therethrough; head having a cavity therein open into said bore; c) said capture end of said shank being received within said shank receiving bore of said head; d) a knurled dome formed on said capture end of said shank with a non-slip formation; e) a retainer ring with a split therein to enable resilient expansion and contraction of a diameter of said retainer ring; said retainer ring being received in said head cavity and resiliently receiving said capture end of said shank while within said cavity so as to retain said capture end within said head and forming a shank and retainer ring structure wherein

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the retainer ring rotates with said shank enabling selective angular positioning of said shank with respect to said head when in an assembly configuration; and f) a closure member operably mountable within said head in such a manner as to close said channel and adapted to engage a rod within said channel so as to urge such a rod into direct engagement with said shank and retainer ring structure in such a manner as to secure said head from movement relative to such a rod and to secure said head from angular movement relative to said shank and retainer ring structure in a locking configuration (claim 36), OR a polyaxial head bone screw assembly for surgical implantation and including a shank having a threaded body and a capture end and a head having an outward opening channel open adapted to receive a rod within said channel, said head having a shank receiving bore formed therethrough, the improvement comprising: (a) said capture end of said shank being received within said shank receiving bore of said head; (b) said capture end of said shank has a frusto-conical surface diminishing in diameter toward said shank; (c) a retainer ring that is loaded separately from said shank into said head and being resiliently retained on said capture end of said shank on a side of said bore opposite said shank body within said head to retain said capture end within said head and enabling selective angular positioning of said shank with respect to said head; said shank and retainer ring being joined in a structure within said head such that said retainer ring rotates with said head during the angular positioning of said shank relative to said head; (d) said retainer ring has a frusto-conical retainer bore formed therethrough to enable mating engagement with said capture end within said retainer bore upon expansion of said ring with said ring

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returning to an original diameter after placement on said shank; and (e) a closure member operably engageable with said head and adapted to engage a rod within said channel so as to be adapted to urge the rod into direct engagement with said shank and retainer ring structure to produce friction between said ring and head as to secure said head from movement relative to such a rod and to secure said head from angular movement relative to said shank and said retainer ring structure in a locking configuration (claim 37), OR a polyaxial head bone screw assembly for surgical implantation and including a shank having a threaded body and a capture end and a head having an outward opening channel open adapted to receive a rod within said channel, said head having a shank receiving bore formed therethrough, the improvement comprising: a) said capture end of said shank being received within said shank receiving bore of said head; b) said capture end of said shank has a dome formation to enable non-slip engagement with a rod within said channel of said head; c) a retainer ring that is loaded separately from said shank into said head and being resiliently retained on said capture end of said shank on a side of said bore opposite said shank body within said head to retain said capture end within said head and enabling selective angular positioning of said shank with respect to said head; said shank and retainer ring being joined in a structure within said head such that said retainer ring rotates with said head during the angular positioning of said shank relative to said head; and d) a closure member operably engageable with said head and adapted to engage a rod within said channel so as to be adapted to urge the rod into direct engagement with said shank and retainer ring structure to produce friction

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between said ring and head as to secure said head from movement relative to such a rod and to secure said head from angular movement relative to said shank and said retainer ring structure in a locking configuration (claim 38), OR a polyaxial head bone screw assembly for surgical implantation and including a shank having a threaded body and a capture end and a head having an outward opening channel open adapted to receive a rod within said channel, said head having a shank receiving bore formed therethrough, the improvement comprising: (a) said capture end of said shank being received within said shank receiving bore of said head; (b) said capture end of said shank has a knurled dome having a radius and being adapted to enable non-slip engagement with a rod within said channel of said head; (c) a retainer ring that is loaded separately from said shank into said head and being resiliently retained on said capture end of said shank on a side of said bore opposite said shank body within said head to retain said capture end within said head and enabling selective angular positioning of said shank with respect to said head; said shank and retainer ring being joined in a structure within said head such that said retainer ring rotates with said head during the angular positioning of said shank relative to said head; and (d) a closure member operably engageable with said head and adapted to engage a rod within said channel so as to be adapted to urge the rod into direct engagement with said shank and retainer ring structure to produce friction between said ring and head as to secure said head from movement relative to such a rod and to secure said head from angular movement relative to said shank and said retainer ring structure in a locking configuration (claim 39).

It is noted that the subject matter of claims 31-39 was originally contained in claims 4, 8, 9, 15, 18, 24, 27 and 28. Claims 4, 8, 9, 15, 18, 24, 27 and 28 were finally rejected in the office action mailed 12/01/2006. Applicant responded to the final rejection with remarks filed 03/06/2007 in the Pre-Appeal Brief Conference request. The remarks regarding the rejections under Nichols (U.S. Patent No. 6,090,111), Barker et al. (U.S. Patent No. 6,280,442) and Morrison et al. (U.S. Patent No. 5,891,145) (see page 2 through page 3, 3rd paragraph of remarks filed 03/06/2007) were persuasive. Accordingly, the rejections under the above named references were withdrawn and dependent claims 4, 8, 9, 15, 18, 24, 27 and 28 were indicated as objected to on the "Notice of Panel Decision from Pre-Appeal Brief Review". Applicant subsequently cancelled objected dependent claims 4, 8, 9, 15, 18, 24, 27 and 28 and rewrote them as claims 31-39, which are now allowed. It is also noted that the double patent rejections contained in the final rejection mailed 12/01/2006 have been overcome by Applicant's amendments to the claims.

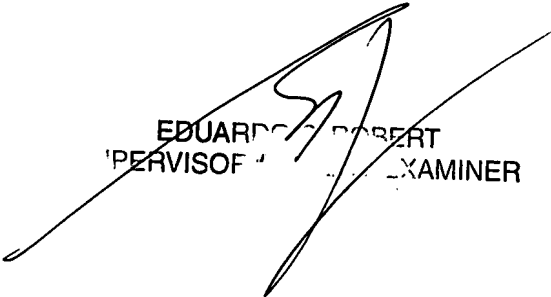
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Hoffman whose telephone number is 571-272-5566. The examiner can normally be reached on Monday-Friday 9:00-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eduardo C. Robert can be reached on 571-272-4719. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MCH



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